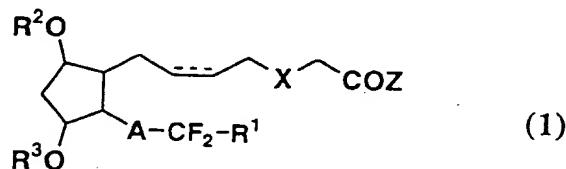


WHAT IS CLAIMED IS:

1. A fluorine-containing prostaglandin derivative of the following formula (1) or a salt thereof:

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wherein A is an ethylene group, a vinylene group, an ethynylene group, $-\text{OCH}_2-$ or $-\text{SCH}_2-$,

A
10 R^1 is a ~~substituted or unsubstituted C_{3-8} alkyl~~ group, a substituted or unsubstituted C_{3-8} alkenyl group, a substituted or unsubstituted C_{3-8} alkynyl group, a substituted or unsubstituted C_{3-8} cycloalkyl group, a substituted or unsubstituted aralkyl group or a substituted or unsubstituted aryloxyalkyl group,
15 each of R^2 and R^3 which are independent of each other, is a hydrogen atom or an acyl group, or forms a single bond together with Z,

X is $-\text{CH}_2-$, $-\text{O}-$ or $-\text{S}-$,
Z is $-\text{OR}^4$, $-\text{NHCOR}^5$, $-\text{NHSO}_2\text{R}^6$ or $-\text{SR}^7$, or forms a
20 single bond together with R^2 or R^3 ,
each of R^4 , R^5 , R^6 and R^7 which are independent of one another, is a hydrogen atom, an alkyl group, an alkenyl group, an alkynyl group, a cycloalkyl group, an aryl group or an aralkyl group,
25 and a dual line consisting of solid and broken lines is a single bond, a cis-double bond or a trans-double bond.

2. The compound according to Claim 1, wherein A is an ethylene group or a vinylene group.

3. The compound according to Claim 1, wherein X is $-\text{CH}_2-$.

5 4. The compound according to Claim 1, wherein both R^2 and R^3 are hydrogen atoms.

5. The compound according to Claim 1, wherein Z is $-\text{OR}^4$.

6. The compound according to Claim 1, wherein R^1 is a substituted or unsubstituted arylexyalkyl group.

10 7. The compound according to Claim 6, wherein R^1 is a phenoxyethyl group, a 3,5-dichlorophenoxyethyl group or a 3-chlorophenoxyethyl group.

13 8. The compound according to Claim 1, which is 16-phenoxy-15-deoxy-15,15-difluoro-17,18,19,20-tetranorprostaglandin $\text{F}_{2\alpha}$, 16-(3-chlorophenoxy)-15-deoxy-15,15-difluoro-17,18,19,20-tetranorprostaglandin $\text{F}_{2\alpha}$, 16-phenoxy-15-deoxy-15,15-difluoro-13,14-dihydro-17,18,19,20-tetranorprostaglandin $\text{F}_{2\alpha}$ or an alkyl ester or a salt thereof.

20 9. A medicine containing the compound according to Claim 1 as an active ingredient.

10 10. The medicine according to Claim 9, which is a preventive or therapeutic medicine for an eye disease.

11 11. The medicine according to Claim 10, wherein the eye disease is glaucoma or ocular hypertension.

25 12. The medicine according to Claim 9, 10 or 11, wherein A is an ethylene group or a vinylene group.

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8 13. The medicine according to Claim ~~9, 10 or 11~~, wherein
X is -CH₂-.

9 14. The medicine according to Claim ~~9, 10 or 11~~, wherein
both R² and R³ are hydrogen atoms.

10 5 15. The medicine according to Claim ~~9, 10 or 11~~, wherein
Z is -OR⁴.

16. The medicine according to Claim 9, 10 or 11, wherein
R¹ is a substituted or unsubstituted aryloxyalkyl group.

A 11 17. The medicine according to Claim ~~16~~, wherein R¹ is a
10 phenoxyethyl group, a 3,5-dichlorophenoxyethyl group or
a 3-chlorophenoxyethyl group.

12 18. A medicine containing 16-phenoxy-15-deoxy-15,15-
difluoro-17,18,19,20-tetranorprostaglandin F_{2α}, 16-(3-
chlorophenoxy)-15-deoxy-15,15-difluoro-17,18,19,20-
15 tetranorprostaglandin F_{2α}, 16-phenoxy-15-deoxy-15,15-
difluoro-13,14-dihydro-17,18,19,20-tetranorprostaglandin
F_{2α} or an alkyl ester or salt thereof as an active
ingredient.

13 19. The medicine according to Claim ~~18~~, which is a
20 preventive or therapeutic medicine for an eye disease.

14 12 20. The medicine according to Claim ~~19~~, wherein the eye
disease is glaucoma or ocular hypertension.

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